



SEQUENCE LISTING

<110> The President and Fellows of Harvard College

<120> REGULATION OF BIOFILM FORMATION

<130> 00246/505003

<140> 09/673,605

<141> 2000-10-17

<150> 60/102,870

<151> 1998-10-02

<150> 60/083,259

<151> 1998-04-27

<160> 49

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1090

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(1090)

<223> n is a, t, c, or g.

<400> 1

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gagcgcagna gaggaagnn gggagganga ggaaggagga gagnggaaga aggggggaag 60
gggagggggg aaggagagn ggggagnngg gggnatnngg gannngggng gggngngggn 120
ntgnttatna tnanctccg gccggacgaa gaaattccc atgcattgct cgagcgcgta 180
ggcctgtctc gggacaaggt caaccacgta ttcagcaaag tgctcnaggc ggaantgctg 240
ctgcgcgaac tggcctcgca nttcagccac ggctgaatag gctcgcccgg tcatttgatc 300
tttccacgc tctgcgtggg aatgcatccc gtgacgctct gcgtcacatc tcagaagcgg 360
aacgcggagc gtccctggcg acnttcccnc ncaggggagcg tggggaaccn ancaaacntg 420
gtcccctcga ttntaaagt ctctcttaaa ancttcttnc gggcttccag ggtattttgg 480
tccancccc ttgggaaccc anatcccca ggcgcccg ggttgcccn tttgatcctg 540
gggattccga ctttgttct tgnaaatccc cccttccatt gaaaccnccc angtttngcc 600
ttttgtttcc ctttgggccc ntnccaatcc gntgnggcaa aaacgccc atanggggcn 660
gggcgggtccc ccccccnng nntgttactn aantncanaa cgccnnttgg gccanaaann 720
tcgntctngn nnnnnncnnc gncntctttn ctncnctcc nnnctntnnt cctcngtgta 780
tntccaantc ntncnncgc cntcngcc tccccactnc ctnggccctc cnnncnncg 840
cgttncattn ctccnccntn ntccgcttnt cccntttan cgtngccgtt ncccgcccg 900
nnnnngtca tcnntgncgc tcttcnccc nccctgtccn cccantgccn ngnnnctccg 960
aggtcgcnng tctcnccncc nccngnttgc tgcncngcn cngatccc ttncnccng 1020
nccntnatgc tgaccagtnn gngngngtnn nnnctccc tcnagnacntg tntngngggg 1080
gggcccnc 1090
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<210> 2

<211> 277

<212> DNA

<213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(277)
 <223> n is a, t, c, or g.

<400> 2
 ggnggggngg ggncttgtgt ataaatntca ggctctgaca tccaggccgc aggcggcctg 60
 gtcccnatgg ttatcgacca ntccgccccg ggcnangtg cctatnanat ctactcncgt 120
 ctgctcaang aacgcgtcat ctttctgggt ggccccgtaa aagactacat ggccnacctg 180
 atctgtgcgc aactnttgtt ccttgaancc naaaacccgn acnaggatat ccattctctat 240
 atcaacnccc cnggtactag ttcaacccgt gaaaaaa 277

<210> 3
 <211> 819
 <212> DNA
 <213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(819)
 <223> n is a, t, c, or g.

<400> 3
 gctngtgtct acgcntcagc aanaatgccg cccgcgacna caacncttaa tcngctgaaa 60
 ntccattgga tgatgctcca cccgtccatc cnancctgga agccaggatt nctgccccgac 120
 atnanggtnc ggggtggcaac aatctcaccg naacctgnnc ctgtgggtcac aancgagggtt 180
 caggtcacca cggncgtccc ggccaccggtt gccccnctgg tcaggccggg ccagggnncg 240
 gtngccccag angtcnatcc tccctttgac cctnaancng acccgcnca tgcntggcna 300
 ccnttgcntt tggcaatgga ccngggngga catnttnccg cccgctatcc agggcncnac 360
 ccaanantac ngccccggcg tccctctann ntntactatt cnacgcgtgg gcananntgc 420
 cctngtngg cttncctttc tcttccccgn cncctntttt tccccnnntt tttttgncgc 480
 gncccnctct cmtccctnc cttccnncnn cctcgtctn nnnccctngt gggcctcnc 540
 cctttntcct tcttccnncn tttntctccg tggccctnct ctctgnttcc ncnngtngc 600
 gtccgggttan cccagctcg ctctccnccg ctgnngcnc ctctnttctt gcttctctt 660
 cctgtgggcc ctntgcgac ncnncanctt ctctcgtctn nggtcncanc cttcngtntc 720
 cgcnnngnnc gncnncctnc tctngcnccn nnntcgtctt cgtnnnncng tncnncnncn 780
 ncagtcnngt gtngnnagnt tnnngnagtn tgnnatccc 819

<210> 4
 <211> 832
 <212> DNA
 <213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(832)
 <223> n is a, t, c, or g.

<400> 4
 gatggatatc gtnactcggg caccgctggg gtgggtgctcg gaacagggtc tcgaagttcc 60
 cgccagtggc cttatcgatg ctgacttcaa ctttgccgc gtctttgtag acgtcgtctt 120
 ttggtgcgtc gacagtcacg gtgccggctc tggcgccgc agcgatgttg atcaccgcgc 180
 cgttgctcag ggacacagtg acaggcgagc ccgcggcgtt ggtcaagggtt gcgggtgtaa 240
 cgatcgaacc gccttccgca acgctatcgg ttgcactcaa agtcaggccg gtagtgcct 300
 gaatgtctgt nanngtgggt tcngccgggg tggcgctccan gtccaatatt tcataattnc 360
 nacntgggg tctccannt tnannctcaa gttatcgccc ccccccaaag gtcctttng 420
 cgtnacnaaa ttcaccgann ccganctggc nccnaaccgg aanggtgang gtctgggccc 480
 ttcnaacang gttnnataac caaacggaac ntccgggtcac cgttttctt taacngaagg 540

nggtgttnna	accncggncc	cnncttccgg	ccaangngng	aaattnnncg	gtgggnggaa	600
aanaggtcna	ngtttttnaan	gggtttccng	tnancntcnt	nnncccnan	ggntttnttn	660
ntnanaaaacc	aaanntcncc	ngaatttncc	nccnggtngg	nttttnncng	nannnnnggaa	720
nttnnnngggt	gggnnnnccn	ntcctttgtt	tnnaaaatna	nncnttttng	ggncnnnnnc	780
naaaagggnc	annngnggnc	cnnntggggn	ggnnnccnnn	gggnccnaag	nt	832

<210> 5

<211> 1054

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(1054)

<223> n is a, t, c, or g.

<400> 5

cncaanggc	cagagcacag	gatatgcngc	aatctcatgg	acaaacggcg	ccagcccnat	60
ggaggccacc	gacnccacat	ccgtcgcgcc	ggtcgcttgc	aggcncgcca	acgcancctc	120
aaggttctgc	gccanttgca	ncnctncctc	gcncaccanc	cnnagttgcc	agcncncaa	180
actccccacc	ncnaanncnc	ntnacnaaat	nntgggtttc	cgnataccgc	ccncactcac	240
gcaccaattg	ctcaccncng	gcctgaacna	actggtcggt	ncnctncccg	ccccatccnc	300
tggttnaaac	nggcnatctc	cttnaccccc	agcaacancn	aataaccggg	acctggccan	360
cnccgggtng	ctcaccgggg	cattaaactg	cattttcaaa	atatnnccgg	ttggccacgc	420
ccgtnagggt	gtcctgntag	gatccncccc	ccantttcnc	tntgccccctn	ggnctgntcn	480
nggaannngn	ccntgagctt	tctcgaccat	ctgggtttct	tnctcntgen	cccactcncg	540
nnncaagttt	taaggtnttn	nctccgggna	atcctctnng	gcnnnnnctt	naactgnaaa	600
cttccnccga	acngggncct	aanantagnc	ctatnngggg	nnacnngcgt	tgnccaaccn	660
aactnttttt	ttttcccgag	cgcggggctn	ttcaagtctt	tgaacgnaac	tcctcnngtc	720
nttccacang	gnctcccccc	tantntntaa	ccgcgtntcn	tctatnttgg	gngtccccgn	780
ntncatacat	gncngagtan	aagaagctcn	ancctccena	nnnggntctc	cgccccccaa	840
ttntntccct	ctctcccttt	nancntctaa	atatattctt	tnntgggnnt	naanaagggg	900
ggcgcanaaa	nacctntctc	cggggggggt	tgtgggncct	nnanaaacc	ccctttctnt	960
tnnnnncccc	cctccgnggg	ggctccnccc	tccctnttgg	ttttccccnc	ctannaatcc	1020
ctactcncng	gnctagttga	aaaaacanna	acgc			1054

<210> 6

<211> 880

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(880)

<223> n is a, t, c, or g.

<400> 6

ncnnacgnnt	ngnaagtgat	caggccnatt	aaacnnntga	cnaaannaga	acangnnnggt	60
ctgttactac	tcttcaagac	caacccaagn	cgaccgtgna	tagcgngncc	tntacgcagc	120
atcngttccn	catttagatt	mntatccatc	cntaagtttc	nccgggtcag	aacgntnctt	180
gacgtacaac	ccatannngc	gggtannngg	nnatttttng	ctacctcnca	tgttttggaa	240
gnccnantnc	ccnttaatng	gnagcnnncn	ncangcncnn	ggggattatt	acnactcnac	300
ccntgganaa	cnttgccact	acngcnggnc	ccccgengng	tcenggnctc	ccctgcccac	360
ttcccttgtc	tcccgncctc	tntnccccct	tttncgctcn	ncttctgggtg	tncgnttccc	420
ctccccccng	tcctcnttca	ncnnctngcg	tctnngggac	ctngncgnnc	tcttccctnc	480
tgggccctct	ncccccnctt	cgttntancc	cctctctcna	cntncttcat	cccgctccctn	540
ttcttnctct	ccnctcncn	ccctntccta	ntcctntcgt	ccnctncngn	tcntegtctn	600
cctncncnc	ttntcgactt	cnnctgtgtg	nccnccccgc	ngngncttct	ctngtcttct	660

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cccgctcngcn gctcaganncc cntccttccn ttncctnctnn ctgtccgncn gcgnnccctgt 720
ncctncgncncc cctagannngg ncgcgcctcn gcnncctcgt cccnngntnt nntctttctg 780
cnccgtgctc nntnttctntn tntcnnctcg cccatcenct ncctctntnn nncgtngntt 840
ccncttctag gncnnnattc cnannncngg cnttncccc 880

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<210> 7

<211> 779

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(779)

<223> n is a, t, c, or g.

<400> 7

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ncaanncaga tcctgnaaaaa cgggaaaaggt tccnttcagg tacgctactt gtgtataaaa 60
gtcagggccc aaacgccccca ggtgcaacaa ctggtcnaag gctacntggc gggttacaac 120
cgtgcgctgg tcnaacgcaa ggccaaaggc ctgcccnaac aatgtgccag cnaatgggta 180
cggccgatca cggcgctgga cctggtcaag ttgaccgccc ggctgttggt ggaagggggc 240
gtcggccagt tcgcnangc cctggccggc gcgcaaccgc cccaggcnac cgcactcgcg 300
ggcaccccggt tcaccggttt cgcggccggc gcaacccggc agcagcnttt tgccctgaaa 360
cgcggcaaca atgcnttggg ccatcggcna cnaacgctcg ttcaatgggc cgttnggaat 420
ntttgcttgg caaaccccc atttttcccg ttgggttagg cggcattcct tttctnacca 480
naaagcacct gaaccattcc cgggcaanct tggaaattct tgggccccng ngcctgccaa 540
ttttgccnaa aaatcaanat cggtttcaac canccnccct gcctggaacc aaaccgtcaa 600
aaactccaaa aaaattcccc cttncnctt gcaatcnntc naagaaccaa cccttttttn 660
ccaaggnatt ttttttcna naaacncaa angntttnt naattttacn acttaaggcc 720
anttnnaaag tncccaattt tttanngtcc aatttgnccc nattttaaag gtccegggt 779

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<210> 8

<211> 848

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(848)

<223> n is a, t, c, or g.

<400> 8

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gccnnnncnc nattatncaa gntctaagtg ttnnaccana tnccaaggac ataatgactt 60
ncctttatta antgtccgga ccatnccata tncaaccgtg canaccgtna acttnacceca 120
ncatgnctcc gcntgtcgta tttatanncc ccataagctt cnccegtcag aacgttncaa 180
taggtacant natactgcnc ggcncatggc attttggctt tctttatgtt nggnagttn 240
aacagccttt ttatggagcg tccacagcta tagggggaaa ntncatttca acnctggcna 300
aantttgaaa aactnaganc ttcnnnggtt tataggggta tcccntgacc aaannccnct 360
aattecnacn ctttgntccc acttcctccc tngcgcgnc taccnngng ccccgtecc 420
tccccncngn ncntnggnca cngggggaaa ngnnntcncc cegtggtttt ctccengten 480
tngnnnnncc tcgtgnntcc cggnnccctn cccccngtt cggaactntt ctccccnncn 540
ccncgcgng tgcgtctnnn tncccnngn tncncngnt tncncngccn cntttcctc 600
ccccccccc ttanccngga nccctctccc tncgntggc cngccccccn ggncctctcc 660
ctntnccctc ggngncncnc gncgcnetcc ttnncntteg cctcctccnn cntcnctc 720
cnctcntncc nntcccncc ctentnnntc cccntgccc nnnncnccgg cnttcgntc 780
ctcnnnnnnn tnccctgngcc cgcgtgcncn gtngcgnccc gctntcctgc ctgtcncccc 840
ccctnccc 848

```

<210> 9

<211> 533
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(533)
 <223> n is a, t, c, or g.

<400> 9
 tattttgtgta taagntcagc gccagcagtg accgatgtca ccgataccat cgacaccagc 60
 accgttttcgc tcacagcgcac ttcgacgggtg gccgaagggtg ggactgtcgt ttacaccgcc 120
 tcgggttaacg caccgcgtgac cgacgcctccg ttgggttatca ccctgttcca aacggccana 180
 ccatcncat tccggttggn gccagcancn gcaccgtgaa cttcgtgaca ccaaaccgacg 240
 ccctcgcggg cggcgataac ctgagcgtga agattgatga cgccaagggt ggcaattacn 300
 aaaaactgga catcgacgcc accccggcgg acaccaccgt taccgatntg caggacacta 360
 ccggcctgac cttgantgca accgatagcg ttgctgaang cggntcgatc gtttacaccg 420
 caacattgac caacgccncc ggntcgctg tcnctgtnac cctgaacaac ngngcgggtga 480
 tcaacatccc tgcgggngtt tcccccccg tntantcta cacgngngaa aaa 533

<210> 10
 <211> 591
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(591)
 <223> n is a, t, c, or g.

<400> 10
 tgattgtgta taagatcagc cagcaaggcg ccgtcgtcgg gttggtaaag cccaccagc 60
 aacttgGCCa ggaactcct gcccgagccg ctgcggccaa tgatgccnat tttctcgccc 120
 ggcttganc a cagggttnat attctacacc tngggnttct gctggttcgg anaaatnaaa 180
 nttcaactna nngnattcca acggccccctt ccagaacttt cnggtcangg ggngctcntc 240
 caaattgcgc tcttggggca gtcctntcat ctggtcgana ganatcttgg tcaccccccc 300
 ctggttggtat cgggtcntca ngcccnacaa cnaaaccaac nggctgaggg cgcgaccgct 360
 gaacatntnt cangcgacca ncccaccnt gtcangcna ccggcgatna tcaagtntac 420
 nccnaaaana anatgaccac cccngccagt tncctggatca acaaagtgat gttctttgcc 480
 nggcccggana acatcttcac ccccanttct aagcggctga aggtgccgat agtctgttcc 540
 cnctggtatt ggcgtncnc ccccntact antcaacncn tggnaaaaaa a 591

<210> 11
 <211> 1249
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(1249)
 <223> n is a, t, c, or g.

<400> 11
 ctgggtgtat aagatcaggg ccantngtgt cctggagtgt ctgtnacagt ggtttcggca 60
 ngcttgccct cnanatncan tttttcgtaa ttgccaccct atggcctnct ccnaatttga 120
 ancacnagnn acctnccan tgncaagggc ttcttcngcn tcnnngaaatt cancnacnn 180
 naaatngggc caaccctgan tggttaccgt cntgccgcnc ccnctcnggn catttctctg 240
 ccnaagcntc ccggtncctn gnttgccctc taacccaagc gncngntntn nancnncctt 300

gtttcncccc	tncnngncna	cgggtggaan	ggtttttccc	ccntaggggc	ctcnnttntt	360
tctaaancgc	ttttccagaa	aaaggcctgc	ccggtntacn	ccttcttann	tntcgtcgcg	420
tccnagnctc	tatcnccttc	tnnccccctc	ggatactnct	ctgtaagttt	ccctaaaatc	480
nnctggntng	gnttctnncn	anaaagaana	tctntggggg	ctttntntnt	tatatcctct	540
cntattgtnc	tttncnntan	cntctntccn	ngannctcat	tcccganacc	ctctnnnnnc	600
cgccttnenc	tctcntatan	tttctnagtt	gaaccgctcn	tcccnctnca	ctnttattnn	660
ntnngcgggg	cgcnnccttt	gtccctcntt	aaccctgggg	ntngcgagen	tacnggctcn	720
ctccctaata	ctctggggcg	tnnnggggcg	nacgtcctcg	ccttcgttcn	naaatnnttc	780
ntaanttcca	acntcgngcn	gccccgctcc	ggnnnnnnca	atnttntctc	ccccctattc	840
tngctacnca	gcgngtgatn	atcccntttc	cannagcctn	ttcnggggat	aacngngnag	900
ngannctctc	tcttttagtnc	cnnaancnca	tctctnctcc	tcttcttcng	gtcgcgcctc	960
tanancnctg	gtcagttnnn	tctcnaatgn	nnennaggnt	cccnnttntc	cnctcncctc	1020
ttgnnnactc	ccngtntgtc	cnggantggg	tcttccgcct	cggnancnnt	gtcctntntt	1080
tcncnanncg	aanantctcc	ttntctaaca	nccttcgcen	aanacntttt	nactctnccc	1140
tctcctcttc	ctnnctcgtc	tnattntnan	ttncntncct	anncngtgac	tcgttagcnc	1200
tccgntcttt	ccnantcttc	gcccccntct	ccnctcnca	nnctatccc		1249

<210> 12

<211> 373

<212> DNA

<213> Psuedomonas fluorescens

<220>

<221> variation

<222> (1)...(373)

<223> n is a, t, c, or g.

<400> 12

tnattgtgta	taagntcagg	actagagntc	ctctcttagt	nacggttcgc	agcgttttgc	60
accgcatcgt	ccantgcgtn	ccccaccccg	tactagtcga	cacgtggana	aactcgcccc	120
gagtcgaacn	gtgggtanta	gtcgaagcgt	ggnganggnt	cncgntatna	ggcntaanana	180
ctgcatcacg	aaagcngggg	gaaggttctc	naaaanttcn	ccnatgaggg	agaacacgga	240
aancccttta	ccncaggggc	ggcccngaaa	tctggcaacn	gancggnngg	agaatcnncc	300
atttcgtcag	ctccatgggc	accaccggga	acatcatggg	cgtcnnntnc	cngtactant	360
cgaccgtggc	caa					373

<210> 13

<211> 683

<212> DNA

<213> Psuedomonas fluorescens

<220>

<221> variation

<222> (1)...(683)

<223> n is a, t, c, or g.

<400> 13

tgactgtgtg	ttataagntc	agncgcaent	ggnagtcenc	ntntgggttg	tangatccgc	60
ancnattaag	ctggccnngg	gaaantcngg	ttcaacccgn	tgcngncaat	ganncnntat	120
ttcactcncc	cggcgtncac	ncctnngtan	tantcgaccc	ntggncanta	ntantctaca	180
nnnggtcaaa	acntttccan	nnngtaggng	ncgccctntn	tanangtnan	cttcgtnacg	240
ggggagggaaa	angctccccg	gnggccannn	gccgagccta	aaaaangagg	cangtanggg	300
tgngaaaaaa	naatanctng	atangacncc	acccnntttg	acgccaatta	accgangtac	360
angaccnngn	cnaactcatt	ttnagtgtnc	gcgacagaaa	tttttnanggn	cgcnccangn	420
gaangntctt	cnanggtttt	gnaaannnaa	acnaggccct	ccnntaaatg	gtggacccgc	480
ggnaaanntt	nccncgant	gggggttttg	aattactttt	caacaatctt	caaaacntcc	540
gggtcnancc	aggaggggnc	aaaaaaaaaa	tnttttccgn	gtngccnnaa	aaatatccna	600
aatttntntn	cccccccccc	nccnnaaaaa	aagggngggg	gggaagggga	aaaagggggg	660

<210> 14
 <211> 672
 <212> DNA
 <213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(672)
 <223> n is a, t, c, or g.

<400> 14
 gtgcttggtg ataagntcag nccctggcct gngcgnac aactccggtg nccgtctaca 60
 nttagcnaa ggatcggtca ttgcctngtc tncctggntan actnccggga cnatccacct 120
 caatactccn nccattnacg tctatggtaa ccnggaggtc ggtcancagn ncnattaccg 180
 gtnctaccng tggaaacttc gaaaatctng tggcnaacac gggacctgcg gtccccncca 240
 ntcccgattc ngnganacn ncatggntgt cncnnacngg nngcnacncc attcctgnan 300
 gggngccaan ttcctttcnc ntcaanccgt nggnaacggg ccnaatncc gtnaacgtta 360
 ccnnnganaa atggtcngtt ttccattccc ccgggggnan aaaccgggac ngaagatttc 420
 aanaccgcg cntntnattn taccnngggg nngcggggtc gncccccncn nnacnngtga 480
 naangggggg ctnttcaaan ttctntngtg tnanacnac cctgggggtt natantant 540
 ncanaattnc gggnggaana ccaccggggc ttannnnctt nnaacnggnc nnncnaccnn 600
 ctttcnnnn ngggggggng ttccnnncnc ccccnttnn ntnnttttnn aaannttttt 660
 gggggaaaaa aa 672

<210> 15
 <211> 1676
 <212> DNA
 <213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(1676)
 <223> n is a, t, c, or g.

<400> 15
 tgcttggtgta taagatcagg gcccgnccg nccnnantta ngctctgggtc aacgacacnn 60
 catnggtgcn gtgganactc antttacnag gcncttaaaa ngcatnattg ttatncagtn 120
 ngncgaggtg gntcctcccn tanccgaagn natntgmnna cttggaanga tttanancntt 180
 ttccantcgg tngntaccag nngtgantcn tcantttctg acaccnctg gtnncnntcc 240
 tgttcacncc tanannngac cncctctctc gntgngggcc tggngcntaa tatnntaccg 300
 gctttnnant gctgtcagta tnantctcgn nagnngnaaa ntcnctctnc anncggtgtn 360
 tntngtctcn cncctctcct nctcntacac tcaactnactn tntnctgnaa atcnntctnn 420
 ctgtantatc acggncancn cgttctntgt ggggctcnc tganaggctc cccctnacct 480
 ctctannnac nggtgcgggt atnnncctat aanagtcttg tgcagtntc acagtnacat 540
 cgctgccnnn cncgngtagc tctgcatcnt cgcccttttn tttctnttct ctngcaaan 600
 atcttntnt ctctcnntcn atcattattc ncangcgnng ggtctccnt cccctcnnn 660
 ncntcngtcc nanacangtc ntnttttagct atgtcttatg tncnctntc anttttntcn 720
 cnccttncac ncttcagann ggctnngnct gacctctata gtcgntcnc tctcctctc 780
 nctnntctc cngcnataac gcnctnncnc ttctggnctc tcnngctctc tntnntata 840
 tccnccgcn ntctctctc tctctcgtnt caattgtncn ctctctcgt 900
 cncctgtcnn ntctancgtt ttcttgactt nannaatacn tacctctctt ngcctctctn 960
 cntntnctct cncgcgcatc ctnggaccgc tncctctgcn cngcgnatc tcttcttnc 1020
 gttctcnnnt tctcgcgnt ctctnngtac tngcttttcc cncctacnt ctcttgctcc 1080
 ttctctgcnt cntctnctc tctcttctct ntctangtcn ncncgnccat nggctttctc 1140
 tegctnctn tcnctcttct ntctntnccg tctcgtctng atcnntctct catcatntc 1200
 tntntntca tcangetntn tgncaactct cnatctgtnt ctctntctta ntnntcctc 1260

cttcctnttc	tcttanctcn	cgtnnatnnc	nttctctgat	ntcctcnagt	atntctatgt	1320
acgctnnct	tnatcgngnn	cctntctcta	tcancatcat	nctagctnnc	ttcctatngt	1380
cctgctctca	ctntttctgc	cnanatatnn	atcnctnctc	tnatctctcn	tanattnttn	1440
cctntnaatg	tttnanaatg	ctctactcna	nctctctntn	tcttnnnctc	cagntcactc	1500
tctananntg	cctnncggtta	tacgntcttn	tncgctttan	tgcgntnct	atcantnncg	1560
ctctttnttt	ctcntctcnc	cntgtntctn	ncacactntc	ttcatctctt	ctcnnatatn	1620
natgtcnntc	tatnnccnct	tctatgctnt	cncctntcna	nccacantnt	nntctc	1676

<210> 16

<211> 721

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(721)

<223> n is a, t, c, or g.

<400> 16

tncttggtgta	taagatcagg	cctatngccg	nctgnggntt	ntctgggtgc	ncgacgcgcc	60
attcgaaaaa	ancagctccg	nnaccngttc	caantacacn	nngttgtncn	nccgnagtgc	120
cagcttcngc	ctcgccnacc	tnnacaattc	ctncnaaacc	ctgggtgtgn	tnntccnnna	180
gctnatgtan	ganngtcnat	nggncngnnn	gnactgtcnt	accnagncnc	angtnngcac	240
caaccngagc	ntcattcncg	cnnacnncga	accccgngng	natcgcttct	ntccnaacnc	300
cnncaanctc	aacnccatng	gttggtgtgn	cnacgacnng	ngcgaaaaacn	ncgcncacnn	360
ngnccnagtc	aagttcccg	ataccacag	cnggtcnggg	ggtntcnccc	cctntcntgt	420
tccaaacatn	nccatanaan	nnnnggtntg	ctgggggaat	ccaanccntc	nnctgngggt	480
cgatcnaaac	aanatanggg	tcaanggncc	gccacttgcn	tnatnaattt	cnncagtgc	540
cntnnctnnc	tgatnngcna	agccnncnnn	gggttgngng	gggnnnntnc	ccnnntatna	600
antanaaacg	gcngntccnt	tnncnccan	gggtgnttgn	ngnttttnnaa	aacnnccttt	660
nnnnaaanan	ccccccnct	ntttncnng	gannannatc	cnnaaannnn	gttcennccc	720
c						721

<210> 17

<211> 452

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(452)

<223> n is a, t, c, or g.

<400> 17

atnnngnnnn	tncttggtgta	taagntcagg	gcncncctn	tcnnaacttn	gtctgggtcg	60
ngctacacnn	cannggnnac	tggcagctcg	gtnaccgcta	cctnanaacg	cttcantggt	120
cctcagcngg	tccacgtcca	gccttgagcc	acatgtnaaa	anncngccna	caanccnngg	180
ngtnaanntc	cacgnnttgc	ncgacgantg	ccaatnnaan	nttctcnacn	gtttcacctg	240
gaangacctt	gccganaccn	anacnntcac	caanggtgaa	nncaactccc	ggnagatncg	300
ctncacnccn	gaccccaacg	aatcctncgc	cgngggtttt	nttagcanca	tcgncgnanc	360
caaccangnc	canttcnccc	cgntntcatt	ccnnccnanc	gacggnnnnt	ctgggcgtcn	420
ccccccccgt	actantctac	ncntnncaaa	aa			452

<210> 18

<211> 442

<212> DNA

<213> *Psuedomonas fluorescens*

<220>
 <221> variation
 <222> (1)...(422)
 <223> n is a, t, c, or g.

<400> 18
 tncttgtgta taagntcagg ntctnagatg agctcggtag ttcangagnt tttctgcgac 60
 cgcgnnnccg acgnctgnaa tcgntggcna ggtnnngcnta nacannnnnaa agtanncccc 120
 tcgaancgnt cnntgacctc ctgntccaaa tngtcacgng cattggncga cgcnnngcnca 180
 cccnncactt cgctcgacnt cccaaaancn gcctggggccn ngcncgncng gattnnngccc 240
 gacatcnntc nancaaanntn ccccnccgcn tactngncca nccttgacca nnttttgenc 300
 tcctntcctt actgggtcng ctctcgntccc ggnttgctna ccannatggt ccnaancctg 360
 ctgtcctnca ctctcaaatn cgcccccggc caacnttgct gatcgncctc nncncccnag 420
 tnctattcaa cccctgccca aa 442

<210> 19
 <211> 538
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(538)
 <223> n is a, t, c, or g.

<400> 19
 ctttgttgta taagnatcag aactagagc ttgccccttc tncancnctt cnatggacag 60
 cggctttcgg gccgtcgagc aacgatctgt ccacagttna ncaccannag gcgntccacc 120
 atcaanagaa aggannncg gtnctnacc acnnacacan gtcttggtat cnaccacggc 180
 agccaagcgn tgtttcaaac gttcttcagc ngtgttgctc atggatctgg ttggttcgtc 240
 caanaacaag ataggcgtgt tnancncnt ncnactngac acgtggaaat tntngctcta 300
 accncccgac angttctgtc nncnctcncc naatnnnaat tcataacctt ncngatgccn 360
 gcggggcaat tcatncncnc ccgccanttc acggnctgga acacanttca actncnacgt 420
 ttcnngcgcc naaaaantctt gttgtcnccc aggnntttnnn nancancnng atntntttgg 480
 ggnnccttnc cnaantnttt nnncnctcc cntnannttg aanntngnng gatgttna 538

<210> 20
 <211> 218
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(218)
 <223> n is a, t, c, or g.

<400> 20
 tnatttgtgt ataagttcag gttgctngnt gnacgccatc ccggccaagg gttgccggcg 60
 tcaccacat ngtactagtc nncgcgtggc cnaaacggtg angctcncta attgatgctt 120
 gccaacgntt naaaaaaaag tatngacagg gtnttaacca tcagnttntn ccnaaangta 180
 ctagtctacc cgtggccana naantnnann nntggnc 218

<210> 21
 <211> 642
 <212> DNA
 <213> Psuedomonas fluorescens

<220>

<221> variation
 <222> (1)...(642)
 <223> n is a, t, c, or g.

<400> 21
 tnctttgtgt ataagntcag gccccggggt ancgncagta ngntntgncga ncggtcctctg 60
 caagctgncg gcgnanattcc ngcgctncct cttnttgcnt ctgaaatgca ttccccctcn 120
 atgagtcggc tgtcttcang gttnggntgg ttncaacatc catcancttg ntctccnctg 180
 ttaccccnegc ngtnncctgc cgccctctca gaccnnggatn cccgtncanc accccctagt 240
 tctaanaacg taccangaan aangaacacc cgctcgcggg tgggcctact tcacctatcc 300
 tgcccggtcg acgccggttg atacaccaag gaaagtctac acnaaccctt tggcaaaatc 360
 ctgtntatcg tgcgaaaaan gatggatata ccgaaaaaat cgctatantg accccnanc 420
 anggttnttg caacggaaaa ncnctncttc cctgctgttt tgtggaatat ctaccgactg 480
 ganacaggcc aatgcatgaa attactgaac tgaagggaca agcaaaaaac catccaanna 540
 actncaccaa cnanctggcc gagtnggttt naatccccgc gccggccaaa aaacgcncgc 600
 attaannaan gcnnggttgtt tctntnctc gnnnaaanaa aa 642

<210> 22
 <211> 583
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(583)
 <223> n is a, t, c, or g.

<400> 22
 tattgtgtat aagatcagnc cagcngtggt cntacagntg ggacaggcgg cgctcgcaagc 60
 ttccccctga gtgntgntcc agnnatancg agncntgngt gttataaaca aancacggnn 120
 atcgtataac nccgttcgtg acgncgtatc gccanattcn naatnccgna aacgggtnga 180
 aatccgtaat ccaagtgtta tcntgcncgg gatgttctag agcaactcca tcactntac 240
 aancctgttc gancttgtca tggcacctcc actgagacaa cgggtgtnctc aatagtcanc 300
 acnccccctnn cccccnggga gganaatntnt cncgtggnncc acncnancan catctttaac 360
 gnataatttct tntttatcag cccnnttggt taccnntgc gtcattgggt ggntgcagcg 420
 acaacncccg gagaaancna tttnccttggg nggctentcn atcatcngca ccncccccca 480
 aattganaag gtcgccccnc nccnngagan acnntanccc angtcggccn tcnnncangtg 540
 cgtggcgctcc ccnccccgtn ctantcnacc ctnnccagnc caa 583

<210> 23
 <211> 360
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(360)
 <223> n is a, t, c, or g.

<400> 23
 tctttaanta gnaccgacga ntcctcctan caccctaac cagtcnacgg ctngtggcga 60
 ctggatatng acactngacc aggtcggggc ntccccccac nnnntnctatt caacgcttgg 120
 ccaaacacgt ggctcanatct ctncnccagt cccctcntan cnttctccga tacactntc 180
 ttcttccaat atcccccgct aatccccctct catcngtgaa nnggccccgc tccattaaaa 240
 agcatngngc nnacaaacaa ccngagatcn ttcnnnttnn canncctccc gntccctcaa 300
 atttcgnnag gggnccggtt gcgaccnaa accgntccn ngnggnaaat ttcttncntt 360

<210> 24
 <211> 494
 <212> DNA
 <213> Psuedomonas fluorescens

<220>
 <221> variation
 <222> (1)...(494)
 <223> n is a, t, c, or g.

<400> 24
 tncctgtgta taagntcagg cgcaggcgng accgcactan ctatgtgang ngctctcngt 60
 cggngnnnca ggcnatgccc gtcattgtcc atntgcngac naccctacta ctcttntgcn 120
 tgancatgac tgccggggccg anaagttgcg cattgtcacc taaccctggg cgcctgtatg 180
 tctncnaaaa naactgcaag atgctgggccc tggactacna aaccacggcc atcgtgttca 240
 agcncctggg tntcgacgtg gaatggcagt tcctgccgtg gaancgctgc ctgggtgatgc 300
 tggancagggg gttggcgtag cgnncccngt acnnttnnac ccntgnnnaa ancnatnccn 360
 tgcngcttta ccccnncnaa ncncntncng acntggaatt tgtgatnttc tacnccnatg 420
 cccngcccca tcnttttcgc ncncncnata anctgggngn ccccnccccc gtnntantcn 480
 accntgggna anaa 494

<210> 25
 <211> 23
 <212> DNA
 <213> Escherichia coli

<400> 25
 gaacgttacc atgtaggag gtc 23

<210> 26
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> variation
 <222> (1)...(35)
 <223> n is a, t, c, or g.

<223> Random sequence

<400> 26
 ggccacgcgt cgactagtag nnnnnnnnnn gatat 35

<210> 27
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Random sequence

<400> 27
 ggccacgcgt cgactagtag 20

<210> 28
 <211> 24
 <212> DNA

<213> Escherichia coli

<400> 28

cgggaaaggt tccgttcagg acgc

24

<210> 29

<211> 35

<212> DNA

<213> Escherichia coli

<220>

<221> variation

<222> (1)...(35)

<223> n is a, t, c, or g.

<400> 29

ggccacgcgt cgactagtag nnnnnnnnnn acgcc

35

<210> 30

<211> 17

<212> DNA

<213> Escherichia coli

<400> 30

caggctctcc cgtggag

17

<210> 31

<211> 17

<212> DNA

<213> Escherichia coli

<400> 31

ctgcctccca gagcctg

17

<210> 32

<211> 23

<212> DNA

<213> Escherichia coli

<400> 32

gcttccttta gcagcccttg cgc

23

<210> 33

<211> 24

<212> DNA

<213> Escherichia coli

<400> 33

cttccatgtg acctcctaac atgg

24

<210> 34

<211> 595

<212> PRT

<213> Escherichia coli

<400> 34

Met Ala Gln Val Ile Asn Thr Asn Ser Leu Ser Leu Ile Thr Gln Asn

1

5

10

15

Asn	Ile	Asn	Lys	Asn	Gln	Ser	Ala	Leu	Ser	Ser	Ser	Ile	Glu	Arg	Leu
			20					25					30		
Ser	Ser	Gly	Leu	Arg	Ile	Asn	Ser	Ala	Lys	Asp	Asp	Ala	Ala	Gly	Gln
		35				40						45			
Ala	Ile	Ala	Asn	Arg	Phe	Thr	Ser	Asn	Ile	Lys	Gly	Leu	Thr	Gln	Ala
	50					55					60				
Ala	Arg	Asn	Ala	Asn	Asp	Gly	Ile	Ser	Val	Ala	Gln	Thr	Thr	Glu	Gly
65					70					75					80
Ala	Leu	Ser	Glu	Ile	Asn	Asn	Asn	Leu	Gln	Arg	Ile	Arg	Glu	Leu	Thr
			85						90					95	
Val	Gln	Ala	Ser	Thr	Gly	Thr	Asn	Ser	Asp	Ser	Asp	Leu	Asp	Ser	Ile
		100					105						110		
Gln	Asp	Glu	Ile	Lys	Ser	Arg	Leu	Asp	Glu	Ile	Asp	Arg	Val	Ser	Gly
		115					120					125			
Gln	Thr	Gln	Phe	Asn	Gly	Val	Asn	Val	Leu	Ala	Lys	Asp	Gly	Ser	Met
	130				135						140				
Lys	Ile	Gln	Val	Gly	Ala	Asn	Asp	Gly	Gln	Thr	Ile	Thr	Ile	Asp	Leu
145					150					155					160
Lys	Lys	Ile	Asp	Ser	Asp	Thr	Leu	Gly	Leu	Asn	Gly	Phe	Asn	Val	Asn
			165					170						175	
Gly	Ser	Gly	Thr	Ile	Ala	Asn	Lys	Ala	Ala	Thr	Ile	Ser	Asp	Leu	Thr
		180					185						190		
Ala	Ala	Lys	Met	Asp	Ala	Ala	Thr	Asn	Thr	Ile	Thr	Thr	Thr	Asn	Asn
		195					200					205			
Ala	Leu	Thr	Ala	Ser	Lys	Ala	Leu	Asp	Gln	Leu	Lys	Asp	Gly	Asp	Thr
	210				215						220				
Val	Thr	Ile	Lys	Ala	Asp	Ala	Ala	Gln	Thr	Ala	Thr	Val	Tyr	Thr	Tyr
225					230					235					240
Asn	Ala	Ser	Ala	Gly	Asn	Phe	Ser	Phe	Ser	Asn	Val	Ser	Asn	Asn	Thr
			245					250						255	
Ser	Ala	Lys	Ala	Gly	Asp	Val	Ala	Ala	Ser	Leu	Leu	Pro	Pro	Ala	Gly
		260					265						270		
Gln	Thr	Ala	Ser	Gly	Val	Tyr	Lys	Ala	Ala	Ser	Gly	Glu	Val	Asn	Phe
		275					280					285			
Asp	Val	Asp	Ala	Asn	Gly	Lys	Ile	Thr	Ile	Gly	Gly	Gln	Glu	Ala	Tyr
	290				295					300					
Leu	Thr	Ser	Asp	Gly	Asn	Leu	Thr	Thr	Asn	Asp	Ala	Gly	Gly	Ala	Thr
305					310					315					320
Ala	Ala	Thr	Leu	Asp	Gly	Leu	Phe	Lys	Lys	Ala	Gly	Asp	Gly	Gln	Ser
			325					330						335	
Ile	Gly	Phe	Asn	Lys	Thr	Ala	Ser	Val	Thr	Met	Gly	Gly	Thr	Thr	Tyr
		340						345					350		
Asn	Phe	Lys	Thr	Gly	Ala	Asp	Ala	Gly	Ala	Ala	Thr	Ala	Asn	Ala	Gly
		355					360					365			
Val	Ser	Phe	Thr	Asp	Thr	Ala	Ser	Lys	Glu	Thr	Val	Leu	Asn	Lys	Val
	370					375					380				
Ala	Thr	Ala	Lys	Gln	Gly	Thr	Ala	Val	Ala	Ala	Asn	Gly	Asp	Thr	Ser
385					390					395					400
Ala	Thr	Ile	Thr	Tyr	Lys	Ser	Gly	Val	Gln	Thr	Tyr	Gln	Ala	Val	Phe
			405						410					415	
Ala	Ala	Gly	Asp	Gly	Thr	Ala	Ser	Ala	Lys	Tyr	Ala	Asp	Asn	Thr	Asp
			420				425					430			
Val	Ser	Asn	Ala	Thr	Ala	Thr	Tyr	Thr	Asp	Ala	Asp	Gly	Glu	Met	Thr
	435					440					445				
Thr	Ile	Gly	Ser	Tyr	Thr	Thr	Lys	Tyr	Ser	Ile	Asp	Ala	Asn	Asn	Gly
	450					455				460					
Lys	Val	Thr	Val	Asp	Ser	Gly	Thr	Gly	Ser	Gly	Lys	Tyr	Ala	Pro	Lys
465					470					475					480

Val	Gly	Ala	Glu	Val	Tyr	Val	Ser	Ala	Asn	Gly	Thr	Leu	Thr	Thr	Asp
				485					490					495	
Ala	Thr	Ser	Glu	Gly	Thr	Val	Thr	Lys	Asp	Pro	Leu	Lys	Ala	Leu	Asp
			500					505					510		
Glu	Ala	Ile	Ser	Ser	Ile	Asp	Lys	Phe	Arg	Ser	Ser	Leu	Gly	Ala	Ile
		515					520					525			
Gln	Asn	Arg	Leu	Asp	Ser	Ala	Val	Thr	Asn	Leu	Asn	Asn	Thr	Thr	Thr
	530					535					540				
Asn	Leu	Ser	Glu	Ala	Gln	Ser	Arg	Ile	Gln	Asp	Ala	Asp	Tyr	Ala	Thr
545					550				555					560	
Glu	Val	Ser	Asn	Met	Ser	Lys	Ala	Gln	Ile	Ile	Gln	Gln	Ala	Gly	Asn
			565					570						575	
Ser	Val	Leu	Ala	Lys	Ala	Asn	Gln	Val	Pro	Gln	Gln	Val	Leu	Ser	Leu
		580					585						590		
Leu	Gln	Gly													
		595													

<210> 35
 <211> 119
 <212> PRT
 <213> Escherichia coli

<400> 35															
Met	Gly	Ile	Met	His	Thr	Ser	Glu	Leu	Leu	Lys	His	Ile	Tyr	Asp	Ile
1				5					10					15	
Asn	Leu	Ser	Tyr	Leu	Leu	Leu	Ala	Gln	Arg	Leu	Ile	Val	Gln	Asp	Lys
			20				25						30		
Ala	Ser	Ala	Met	Phe	Arg	Leu	Gly	Ile	Asn	Glu	Glu	Met	Ala	Thr	Thr
		35				40						45			
Leu	Ala	Ala	Leu	Thr	Leu	Pro	Gln	Met	Val	Lys	Leu	Ala	Glu	Thr	Asn
	50				55						60				
Gln	Leu	Val	Cys	His	Phe	Arg	Phe	Asp	Ser	His	Gln	Thr	Ile	Thr	Gln
65				70					75					80	
Leu	Thr	Gln	Asp	Ser	Arg	Val	Asp	Asp	Leu	Gln	Gln	Ile	His	Thr	Gly
			85				90						95		
Ile	Met	Leu	Ser	Thr	Arg	Leu	Leu	Asn	Asp	Val	Asn	Gln	Pro	Glu	Glu
		100					105						110		
Ala	Leu	Arg	Lys	Lys	Arg	Ala									
		115													

<210> 36
 <211> 295
 <212> PRT
 <213> Escherichia coli

<400> 36															
Met	Leu	Ile	Leu	Leu	Gly	Tyr	Leu	Val	Val	Leu	Gly	Thr	Val	Phe	Gly
1				5					10					15	
Gly	Tyr	Leu	Met	Thr	Gly	Gly	Ser	Leu	Gly	Ala	Leu	Tyr	Gln	Pro	Ala
		20					25						30		
Glu	Leu	Val	Ile	Ile	Ala	Gly	Ala	Gly	Ile	Gly	Ser	Phe	Ile	Val	Gly
		35			40							45			
Asn	Asn	Gly	Lys	Ala	Ile	Lys	Gly	Thr	Leu	Lys	Ala	Leu	Pro	Leu	Leu
	50				55						60				
Phe	Arg	Arg	Ser	Lys	Tyr	Thr	Lys	Ala	Met	Tyr	Met	Asp	Leu	Leu	Ala
65					70				75					80	

Leu	Leu	Tyr	Arg	Leu	Met	Ala	Lys	Ser	Arg	Gln	Met	Gly	Met	Phe	Ser
				85					90					95	
Leu	Glu	Arg	Asp	Ile	Glu	Asn	Pro	Arg	Glu	Ser	Glu	Ile	Phe	Ala	Ser
			100					105					110		
Tyr	Pro	Arg	Ile	Leu	Ala	Asp	Ser	Val	Met	Leu	Asp	Phe	Ile	Val	Asp
		115					120					125			
Tyr	Leu	Arg	Leu	Ile	Ile	Ser	Gly	His	Met	Asn	Thr	Phe	Glu	Ile	Glu
	130					135					140				
Ala	Leu	Met	Asp	Glu	Glu	Ile	Glu	Thr	His	Glu	Ser	Glu	Ala	Glu	Val
145					150					155					160
Pro	Ala	Asn	Ser	Leu	Ala	Leu	Val	Gly	Asp	Ser	Leu	Pro	Ala	Phe	Gly
			165						170					175	
Ile	Val	Ala	Ala	Val	Met	Gly	Val	Val	His	Ala	Leu	Gly	Ser	Ala	Asp
		180						185					190		
Arg	Pro	Ala	Ala	Glu	Leu	Gly	Ala	Leu	Ile	Ala	His	Ala	Met	Val	Gly
	195					200						205			
Thr	Phe	Leu	Gly	Ile	Leu	Leu	Ala	Tyr	Gly	Phe	Ile	Ser	Pro	Leu	Ala
	210					215					220				
Thr	Val	Leu	Arg	Gln	Lys	Ser	Ala	Glu	Thr	Ser	Lys	Met	Met	Gln	Cys
225					230					235					240
Val	Lys	Val	Thr	Leu	Leu	Ser	Asn	Leu	Asn	Gly	Tyr	Ala	Pro	Pro	Ile
			245						250					255	
Ala	Val	Glu	Phe	Gly	Arg	Lys	Thr	Leu	Tyr	Ser	Ser	Glu	Arg	Pro	Ser
		260						265					270		
Phe	Ile	Glu	Leu	Glu	Glu	His	Val	Arg	Ala	Val	Lys	Asn	Pro	Gln	Gln
	275						280					285			
Gln	Thr	Thr	Thr	Glu	Glu	Ala									
	290					295									

<210> 37

<211> 308

<212> PRT

<213> Escherichia coli

<400> 37

Met	Lys	Asn	Gln	Ala	His	Pro	Ile	Ile	Val	Val	Lys	Arg	Arg	Lys	Ala
1				5					10					15	
Lys	Ser	His	Gly	Ala	Ala	His	Gly	Ser	Trp	Lys	Ile	Ala	Tyr	Ala	Asp
			20					25					30		
Phe	Met	Thr	Ala	Met	Met	Ala	Phe	Phe	Leu	Val	Met	Trp	Leu	Ile	Ser
	35						40					45			
Ile	Ser	Ser	Pro	Lys	Glu	Leu	Ile	Gln	Ile	Ala	Glu	Tyr	Phe	Arg	Thr
	50					55					60				
Pro	Leu	Ala	Thr	Ala	Val	Thr	Gly	Gly	Asp	Arg	Ile	Ser	Asn	Ser	Glu
65					70					75					80
Ser	Pro	Ile	Pro	Gly	Gly	Gly	Asp	Asp	Tyr	Thr	Gln	Ser	Gln	Gly	Glu
				85					90					95	
Val	Asn	Lys	Gln	Pro	Asn	Ile	Glu	Glu	Leu	Lys	Lys	Arg	Met	Glu	Gln
		100						105					110		
Ser	Arg	Leu	Arg	Lys	Leu	Arg	Gly	Asp	Leu	Asp	Gln	Leu	Ile	Glu	Ser
	115						120					125			
Asp	Pro	Lys	Leu	Arg	Ala	Leu	Arg	Pro	His	Leu	Lys	Ile	Asp	Leu	Val
	130					135					140				
Gln	Glu	Gly	Leu	Arg	Ile	Gln	Ile	Ile	Asp	Ser	Gln	Asn	Arg	Pro	Met
145					150					155					160
Phe	Arg	Thr	Gly	Ser	Ala	Asp	Val	Glu	Pro	Tyr	Met	Arg	Asp	Ile	Leu
				165					170					175	

Arg Ala Ile Ala Pro Val Leu Asn Gly Ile Pro Asn Arg Ile Ser Leu
 180 185 190
 Ser Gly His Thr Asp Asp Phe Pro Tyr Ala Ser Gly Glu Lys Gly Tyr
 195 200 205
 Ser Asn Trp Glu Leu Ser Ala Asp Arg Ala Asn Ala Ser Arg Arg Glu
 210 215 220
 Leu Met Val Gly Gly Leu Asp Ser Gly Lys Val Leu Arg Val Val Gly
 225 230 235 240
 Met Ala Ala Thr Met Arg Leu Ser Asp Arg Gly Pro Asp Asp Ala Val
 245 250 255
 Asn Arg Arg Ile Ser Leu Leu Val Leu Asn Lys Gln Ala Glu Gln Ala
 260 265 270
 Ile Leu His Glu Asn Ala Glu Ser Gln Asn Glu Pro Val Ser Ala Leu
 275 280 285
 Glu Lys Pro Glu Val Ala Pro Gln Val Ser Val Pro Thr Met Pro Ser
 290 295 300
 Ala Glu Pro Arg
 305

<210> 38
 <211> 245
 <212> PRT
 <213> Escherichia coli

<400> 38
 Met Arg Arg Leu Leu Ser Val Ala Pro Val Leu Leu Trp Leu Ile Thr
 1 5 10 15
 Pro Leu Ala Phe Ala Gln Leu Pro Gly Ile Thr Ser Gln Pro Leu Pro
 20 25 30
 Gly Gly Gly Gln Ser Trp Ser Leu Pro Val Gln Thr Leu Val Phe Ile
 35 40 45
 Thr Ser Leu Thr Phe Ile Pro Ala Ile Leu Leu Met Met Thr Ser Phe
 50 55 60
 Thr Arg Ile Ile Ile Val Phe Gly Leu Leu Arg Asn Ala Leu Gly Thr
 65 70 75 80
 Pro Ser Ala Pro Pro Asn Gln Val Leu Leu Gly Leu Ala Leu Phe Leu
 85 90 95
 Thr Phe Phe Ile Met Ser Pro Val Ile Asp Lys Ile Tyr Val Asp Ala
 100 105 110
 Tyr Gln Pro Phe Ser Glu Glu Lys Ile Ser Met Gln Glu Ala Leu Glu
 115 120 125
 Lys Gly Ala Gln Pro Leu Arg Glu Phe Met Leu Arg Gln Thr Arg Glu
 130 135 140
 Ala Asp Leu Gly Leu Phe Ala Arg Leu Ala Asn Thr Gly Pro Leu Gln
 145 150 155 160
 Gly Pro Glu Ala Val Pro Met Arg Ile Leu Leu Pro Ala Tyr Val Thr
 165 170 175
 Ser Glu Leu Lys Thr Ala Phe Gln Ile Gly Phe Thr Ile Phe Ile Pro
 180 185 190
 Phe Leu Ile Ile Asp Leu Val Ile Ala Ser Val Leu Met Ala Leu Gly
 195 200 205
 Met Met Met Val Pro Pro Ala Thr Ile Ala Leu Pro Phe Lys Leu Met
 210 215 220
 Leu Phe Val Leu Val Asp Gly Trp Gln Leu Leu Val Gly Ser Leu Ala
 225 230 235 240
 Gln Ser Phe Tyr Ser
 245

<210> 39
 <211> 375
 <212> PRT
 <213> Escherichia coli

<400> 39
 Met Ile Arg Leu Ala Pro Leu Ile Thr Ala Asp Val Asp Thr Thr Thr
 1 5 10 15
 Leu Pro Gly Gly Lys Ala Ser Asp Ala Ala Gln Asp Phe Leu Ala Leu
 20 25 30
 Leu Ser Glu Ala Leu Ala Gly Glu Thr Thr Thr Asp Lys Ala Ala Pro
 35 40 45
 Gln Leu Leu Val Ala Thr Asp Lys Pro Thr Thr Lys Gly Glu Pro Leu
 50 55 60
 Ile Ser Asp Ile Val Ser Asp Ala Gln Gln Ala Asn Leu Leu Ile Pro
 65 70 75 80
 Val Asp Glu Thr Pro Pro Val Ile Asn Asp Glu Gln Ser Thr Ser Thr
 85 90 95
 Pro Leu Thr Thr Ala Gln Thr Met Ala Leu Ala Ala Val Ala Asp Lys
 100 105 110
 Asn Thr Thr Lys Asp Glu Lys Ala Asp Asp Leu Asn Glu Asp Val Thr
 115 120 125
 Ala Ser Leu Ser Ala Leu Phe Ala Met Leu Pro Gly Phe Asp Asn Thr
 130 135 140
 Pro Lys Val Thr Asp Ala Pro Ser Thr Val Leu Pro Thr Glu Lys Pro
 145 150 155 160
 Thr Leu Phe Thr Lys Leu Thr Ser Glu Gln Leu Thr Thr Ala Gln Pro
 165 170 175
 Asp Asp Ala Pro Gly Thr Pro Ala Gln Pro Leu Thr Pro Leu Val Ala
 180 185 190
 Glu Ala Gln Ser Lys Ala Glu Val Ile Ser Thr Pro Ser Pro Val Thr
 195 200 205
 Ala Ala Ala Ser Pro Leu Ile Thr Pro His Gln Thr Gln Pro Leu Pro
 210 215 220
 Thr Val Ala Ala Pro Val Leu Ser Ala Pro Leu Gly Ser His Glu Trp
 225 230 235 240
 Gln Gln Ser Leu Ser Gln His Ile Ser Leu Phe Thr Arg Gln Gly Gln
 245 250 255
 Gln Ser Ala Glu Leu Arg Leu His Pro Gln Asp Leu Gly Glu Val Gln
 260 265 270
 Ile Ser Leu Lys Val Asp Asp Asn Gln Ala Gln Ile Gln Met Val Ser
 275 280 285
 Pro His Gln His Val Arg Ala Ala Leu Glu Ala Ala Leu Pro Val Leu
 290 295 300
 Arg Thr Gln Leu Ala Glu Ser Gly Ile Gln Leu Gly Gln Ser Asn Ile
 305 310 315 320
 Ser Gly Glu Ser Phe Ser Gly Gln Gln Gln Ala Ala Ser Gln Gln Gln
 325 330 335
 Gln Ser Gln Arg Thr Ala Asn His Glu Pro Leu Ala Gly Glu Asp Asp
 340 345 350
 Asp Thr Leu Pro Val Pro Val Ser Leu Gln Gly Arg Val Thr Gly Asn
 355 360 365
 Ser Gly Val Asp Ile Phe Ala
 370 375

<210> 40

<211> 547
 <212> PRT
 <213> Escherichia coli

<400> 40

Met	Ser	Ser	Leu	Ile	Asn	Asn	Ala	Met	Ser	Gly	Leu	Asn	Ala	Ala	Gln
1				5					10					15	
Ala	Ala	Leu	Asn	Thr	Ala	Ser	Asn	Asn	Ile	Ser	Ser	Tyr	Asn	Val	Ala
		20					25						30		
Gly	Tyr	Thr	Arg	Gln	Thr	Thr	Ile	Met	Ala	Gln	Ala	Asn	Ser	Thr	Leu
	35						40					45			
Gly	Ala	Gly	Gly	Trp	Val	Gly	Asn	Gly	Val	Tyr	Val	Ser	Gly	Val	Gln
50						55					60				
Arg	Glu	Tyr	Asp	Ala	Phe	Ile	Thr	Asn	Gln	Leu	Arg	Ala	Ala	Gln	Thr
65					70					75					80
Gln	Ser	Ser	Gly	Leu	Thr	Ala	Arg	Tyr	Glu	Gln	Met	Ser	Lys	Ile	Asp
			85					90						95	
Asn	Met	Leu	Ser	Thr	Ser	Thr	Ser	Ser	Leu	Ala	Thr	Gln	Met	Gln	Asp
		100					105						110		
Phe	Phe	Thr	Ser	Leu	Gln	Thr	Leu	Val	Ser	Asn	Ala	Glu	Asp	Pro	Ala
	115						120					125			
Ala	Arg	Gln	Ala	Leu	Ile	Gly	Lys	Ser	Glu	Gly	Leu	Val	Asn	Gln	Phe
130						135					140				
Lys	Thr	Thr	Asp	Gln	Tyr	Leu	Arg	Asp	Gln	Asp	Lys	Gln	Val	Asn	Ile
145					150					155					160
Ala	Ile	Gly	Ala	Ser	Val	Asp	Gln	Ile	Asn	Asn	Tyr	Ala	Lys	Gln	Ile
			165					170						175	
Ala	Ser	Leu	Asn	Asp	Gln	Ile	Ser	Arg	Leu	Thr	Gly	Val	Gly	Ala	Gly
		180					185						190		
Ala	Ser	Pro	Asn	Asn	Leu	Leu	Asp	Gln	Arg	Asp	Gln	Leu	Val	Ser	Glu
	195						200					205			
Leu	Asn	Gln	Ile	Val	Gly	Val	Glu	Val	Ser	Val	Gln	Asp	Gly	Gly	Thr
210						215					220				
Tyr	Asn	Ile	Thr	Met	Ala	Asn	Gly	Tyr	Ser	Leu	Val	Gln	Gly	Ser	Thr
225					230					235					240
Ala	Arg	Gln	Leu	Ala	Ala	Val	Pro	Ser	Ser	Ala	Asp	Pro	Ser	Arg	Thr
			245					250						255	
Thr	Val	Ala	Tyr	Val	Asp	Gly	Thr	Ala	Gly	Asn	Ile	Glu	Ile	Pro	Glu
	260						265						270		
Lys	Leu	Leu	Asn	Thr	Gly	Ser	Leu	Gly	Gly	Ile	Leu	Thr	Phe	Arg	Ser
	275						280					285			
Gln	Asp	Leu	Asp	Gln	Thr	Arg	Asn	Thr	Leu	Gly	Gln	Leu	Ala	Leu	Ala
290						295					300				
Phe	Ala	Glu	Ala	Phe	Asn	Thr	Gln	His	Lys	Ala	Gly	Phe	Asp	Ala	Asn
305					310					315					320
Gly	Asp	Ala	Gly	Glu	Asp	Phe	Phe	Ala	Ile	Gly	Lys	Pro	Ala	Val	Leu
			325					330						335	
Gln	Asn	Thr	Lys	Asn	Lys	Gly	Asp	Val	Ala	Ile	Gly	Ala	Thr	Val	Thr
		340					345						350		
Asp	Ala	Ser	Ala	Val	Leu	Ala	Thr	Asp	Tyr	Lys	Ile	Ser	Phe	Asp	Asn
	355						360					365			
Asn	Gln	Trp	Gln	Val	Thr	Arg	Leu	Ala	Ser	Asn	Thr	Thr	Phe	Thr	Val
370						375					380				
Thr	Pro	Asp	Ala	Asn	Gly	Lys	Val	Ala	Phe	Asp	Gly	Leu	Glu	Leu	Thr
385					390					395					400
Phe	Thr	Gly	Thr	Pro	Ala	Val	Asn	Asp	Ser	Phe	Thr	Leu	Lys	Pro	Val
			405					410						415	
Ser	Asp	Ala	Ile	Val	Asn	Met	Asp	Val	Leu	Ile	Thr	Asp	Glu	Ala	Lys

				85				90					95			
Asp	Asn	Pro	Asn	Met	Arg	Lys	Leu	Val	Asp	Glu	Ile	Lys	Gln	Glu	Val	
			100					105					110			
Ser	Ser	Gly	Asn	Ser	Leu	Ala	Asn	Ser	Leu	Arg	Lys	Lys	Pro	Gln	Tyr	
		115					120					125				
Phe	Asp	Glu	Leu	Tyr	Cys	Asn	Leu	Val	Asp	Ala	Gly	Glu	Gln	Ser	Gly	
	130					135					140					
Ala	Leu	Glu	Asn	Leu	Leu	Asp	Arg	Val	Ala	Thr	Tyr	Lys	Glu	Lys	Thr	
145					150					155					160	
Glu	Ser	Leu	Lys	Ala	Lys	Ile	Lys	Lys	Ala	Met	Thr	Tyr	Pro	Ile	Ala	
			165						170					175		
Val	Ile	Ile	Val	Ala	Leu	Ile	Val	Ser	Ala	Ile	Leu	Leu	Ile	Lys	Val	
			180					185					190			
Val	Pro	Gln	Phe	Gln	Ser	Val	Phe	Glu	Gly	Phe	Gly	Ala	Glu	Leu	Pro	
		195					200					205				
Ala	Phe	Thr	Gln	Met	Ile	Val	Asn	Leu	Ser	Glu	Phe	Met	Gln	Glu	Trp	
	210					215					220					
Trp	Phe	Phe	Ile	Ile	Leu	Ala	Ile	Ala	Ile	Phe	Gly	Phe	Ala	Phe	Lys	
225					230					235					240	
Glu	Leu	His	Lys	Arg	Ser	Gln	Lys	Phe	Arg	Asp	Thr	Leu	Asp	Arg	Thr	
			245						250					255		
Ile	Leu	Lys	Leu	Pro	Ile	Phe	Gly	Gly	Ile	Val	Tyr	Lys	Ser	Ala	Val	
		260					265						270			
Ala	Arg	Tyr	Ala	Arg	Thr	Leu	Ser	Thr	Thr	Phe	Ala	Ala	Gly	Val	Pro	
	275					280					285					
Leu	Val	Asp	Ala	Leu	Asp	Ser	Val	Ser	Gly	Ala	Thr	Gly	Asn	Ile	Val	
	290				295					300						
Phe	Lys	Asn	Ala	Val	Ser	Lys	Ile	Lys	Gln	Asp	Val	Ser	Thr	Gly	Met	
305					310				315						320	
Gln	Leu	Asn	Phe	Ser	Met	Arg	Thr	Thr	Ser	Val	Phe	Pro	Asn	Met	Ala	
			325						330					335		
Ile	Gln	Met	Thr	Ala	Ile	Gly	Glu	Glu	Ser	Gly	Ser	Leu	Asp	Glu	Met	
		340					345						350			
Leu	Ser	Lys	Val	Ala	Ser	Tyr	Tyr	Glu	Glu	Glu	Val	Asp	Asn	Ala	Val	
	355					360					365					
Asp	Asn	Leu	Thr	Thr	Leu	Met	Glu	Pro	Met	Ile	Met	Ala	Val	Leu	Gly	
	370				375					380						
Val	Leu	Val	Gly	Gly	Leu	Ile	Val	Ala	Met	Tyr	Leu	Pro	Ile	Phe	Gln	
385					390				395						400	
Leu	Gly	Asn	Val	Val	Gly											
				405												

<210> 43

<211> 290

<212> PRT

<213> Psuedomonas aeruginosa

<400> 43

Met	Pro	Leu	Leu	Asp	Tyr	Leu	Ala	Ser	His	Pro	Leu	Ala	Phe	Val	Leu	
1				5				10					15			
Cys	Ala	Ile	Leu	Leu	Gly	Leu	Leu	Val	Gly	Ser	Phe	Leu	Asn	Val	Val	
		20						25				30				
Val	His	Arg	Leu	Pro	Lys	Met	Met	Glu	Arg	Asn	Trp	Lys	Ala	Glu	Ala	
	35					40					45					
Arg	Glu	Ala	Leu	Gly	Leu	Glu	Pro	Glu	Pro	Lys	Gln	Ala	Thr	Tyr	Asn	
	50				55					60						
Leu	Val	Leu	Pro	Asn	Ser	Ala	Cys	Pro	Arg	Cys	Gly	His	Glu	Ile	Arg	

65					70					75					80
Pro	Trp	Glu	Asn	Ile	Pro	Leu	Val	Ser	Tyr	Leu	Ala	Leu	Gly	Gly	Lys
				85					90					95	
Cys	Ser	Ser	Cys	Lys	Ala	Ala	Ile	Gly	Lys	Arg	Tyr	Pro	Leu	Val	Glu
			100					105					110		
Leu	Ala	Thr	Ala	Leu	Leu	Ser	Gly	Tyr	Val	Ala	Trp	His	Phe	Gly	Phe
		115					120					125			
Thr	Trp	Gln	Ala	Gly	Ala	Met	Leu	Leu	Leu	Thr	Trp	Gly	Leu	Leu	Ala
	130					135					140				
Met	Ser	Leu	Ile	Asp	Ala	Asp	His	Gln	Leu	Leu	Pro	Asp	Val	Leu	Val
145					150					155					160
Leu	Pro	Leu	Leu	Trp	Leu	Gly	Leu	Ile	Ala	Asn	His	Phe	Gly	Leu	Phe
				165					170					175	
Ala	Ser	Leu	Asp	Asp	Ala	Leu	Phe	Gly	Ala	Val	Phe	Gly	Tyr	Leu	Ser
			180					185					190		
Leu	Trp	Ser	Val	Phe	Trp	Leu	Phe	Lys	Leu	Val	Thr	Gly	Lys	Glu	Gly
	195						200					205			
Met	Gly	Tyr	Gly	Asp	Phe	Lys	Leu	Leu	Ala	Met	Leu	Gly	Ala	Trp	Gly
	210					215					220				
Gly	Trp	Gln	Ile	Leu	Pro	Leu	Thr	Ile	Leu	Leu	Ser	Ser	Leu	Val	Gly
225					230					235					240
Ala	Ile	Leu	Gly	Val	Ile	Met	Leu	Arg	Leu	Arg	Asn	Ala	Glu	Ser	Gly
				245					250						255
Thr	Pro	Ile	Pro	Phe	Gly	Pro	Tyr	Leu	Ala	Ile	Ala	Gly	Trp	Ile	Ala
		260					265						270		
Leu	Leu	Trp	Gly	Asp	Gln	Ile	Thr	Arg	Thr	Tyr	Leu	Gln	Phe	Ala	Gly
		275					280					285			
Phe	Lys														
	290														

<210> 44
 <211> 185
 <212> PRT
 <213> Psuedomonas aeruginosa

<400> 44

Met	Leu	Leu	Lys	Ser	Arg	His	Arg	Ser	Leu	His	Gln	Ser	Gly	Phe	Ser
1				5					10					15	
Met	Ile	Glu	Val	Leu	Val	Ala	Leu	Leu	Ile	Ser	Ile	Gly	Val	Leu	
		20						25				30			
Gly	Met	Ile	Ala	Met	Gln	Gly	Lys	Thr	Ile	Gln	Tyr	Thr	Ala	Asp	Ser
	35						40					45			
Val	Glu	Arg	Asn	Lys	Ala	Ala	Met	Leu	Gly	Ser	Asn	Leu	Leu	Glu	Ser
	50					55					60				
Met	Arg	Ala	Ser	Pro	Lys	Ala	Leu	Tyr	Asp	Val	Lys	Asp	Gln	Met	Ala
65					70					75					80
Thr	Gln	Ser	Asp	Phe	Phe	Lys	Ala	Lys	Gly	Ser	Ala	Phe	Pro	Thr	Ala
			85						90					95	
Pro	Ser	Ser	Cys	Thr	Pro	Leu	Pro	Asp	Ala	Ile	Lys	Asp	Arg	Leu	Gly
			100					105					110		
Cys	Trp	Ala	Glu	Gln	Val	Lys	Asn	Glu	Leu	Pro	Gly	Ala	Gly	Asp	Leu
	115						120					125			
Leu	Lys	Ser	Asp	Tyr	Tyr	Ile	Cys	Arg	Ser	Ser	Lys	Pro	Gly	Asp	Cys
	130					135					140				
Asp	Gly	Lys	Gly	Ser	Met	Leu	Glu	Ile	Arg	Leu	Ala	Trp	Arg	Gly	Lys
145					150					155					160
Gln	Gly	Ala	Cys	Val	Asn	Ala	Ala	Asp	Ser	Ser	Ala	Asp	Thr	Ser	Leu

Cys Tyr Tyr Thr Leu Arg Val Glu Pro
 180 165 170 175
 185

<210> 45
 <211> 274
 <212> PRT
 <213> Psuedomonas aeruginosa

<400> 45
 Met Ser Met Asn Asn Arg Ser Arg Arg Gln Ser Gly Leu Ser Met Ile
 1 5 10 15
 Glu Leu Leu Val Ala Leu Ala Ile Ser Phe Leu Ile Leu Gly Ile
 20 25 30
 Thr Gln Ile Tyr Leu Asp Asn Lys Arg Asn Tyr Leu Phe Gln Gln Gly
 35 40 45
 Gln Ala Gly Asn Gln Glu Asn Gly Arg Phe Ala Met Met Phe Leu Asp
 50 55 60
 Gln Gln Leu Ala Lys Val Gly Phe Arg Arg Arg Ala Asp Asp Pro Asn
 65 70 75 80
 Glu Phe Ala Phe Pro Ala Gln Gln Lys Thr Ala Tyr Cys Glu Ala Phe
 85 90 95
 Lys Ala Gly Ser Thr Leu Val Pro Ala Val Val Lys Ala Gly Gln Ser
 100 105 110
 Gly Phe Cys Tyr Arg Tyr Gln Pro Ala Pro Gly Glu Ala Tyr Asp Cys
 115 120 125
 Glu Gly Asn Ser Ile Thr Thr Pro Ser Asp Pro Phe Ala Thr Ala Gln
 130 135 140
 Ala Ile Thr Ala Arg Val Leu Phe Val Pro Ala Thr Ala Asp Val Pro
 145 150 155 160
 Gly Ser Leu Ala Cys Ser Ala Gln Thr Ile Lys Glu Lys Gly Gln Glu
 165 170 175
 Ile Val Ser Gly Leu Val Asp Phe Lys Leu Glu Tyr Gly Val Gly Pro
 180 185 190
 Thr Met Ala Gly Lys Arg Glu Val Glu Ser Phe Val Glu Gln Ala Asn
 195 200 205
 Ile Ala Asp Arg Pro Val Arg Ala Leu Arg Tyr Ser Ala Leu Met Ala
 210 215 220
 Ser Asp Lys Asn Leu Arg Gln Gly Asp Ser Lys Thr Leu Asp Asp Trp
 225 230 235 240
 Ile Thr Leu Tyr Pro Ser Ser Lys Thr Ser Leu Gln Gly Asn Asp Lys
 245 250 255
 Asp Arg Leu Tyr Gln Ile Ala Lys Gly Ser Gln Thr Leu Arg Asn Leu
 260 265 270
 Val Pro

<210> 46
 <211> 172
 <212> PRT
 <213> Psuedomonas aeruginosa

<400> 46
 Met Asn Asn Phe Pro Ala Gln Gln Arg Gly Ala Thr Leu Val Ile Ala
 1 5 10 15
 Leu Ala Ile Leu Val Ile Val Thr Leu Leu Ala Val Ser Ser Met Arg

705					710					715				720
Val	Gly	Ala	Asn	Asp	Gly	Met	Leu	His	Gly	Phe	Asp	Thr	Asp	Gly
				725					730					735
Glu	Thr	Phe	Ala	Phe	Ile	Pro	Ser	Ala	Val	Phe	Glu	Lys	Leu	His
			740					745					750	
Leu	Thr	Ala	Arg	Gly	Tyr	Gln	Gly	Gly	Ala	His	Gln	Phe	Tyr	Val
		755					760					765		
Gly	Ser	Pro	Val	Val	Ala	Asp	Ala	Phe	Phe	Gly	Gly	Ala	Trp	His
	770					775					780			
Val	Leu	Ile	Gly	Ser	Leu	Arg	Ala	Gly	Gly	Lys	Gly	Leu	Phe	Ala
785					790					795				800
Asp	Val	Thr	Asp	Pro	Ala	Asn	Ile	Lys	Leu	Leu	Trp	Glu	Ile	Gly
				805					810					815
Asp	Gln	Glu	Pro	Asp	Leu	Gly	Tyr	Ser	Phe	Pro	Lys	Pro	Thr	Val
			820					825					830	
Arg	Leu	His	Asn	Gly	Lys	Trp	Ala	Val	Val	Thr	Gly	Asn	Gly	Tyr
		835					840					845		
Ser	Leu	Asn	Asp	Lys	Ala	Ala	Leu	Leu	Ile	Ile	Asp	Leu	Glu	Thr
	850					855					860			
Ala	Ile	Thr	Arg	Lys	Leu	Glu	Val	Thr	Gly	Arg	Thr	Gly	Val	Pro
865					870					875				880
Gly	Leu	Ser	Ser	Leu	Arg	Leu	Ala	Asp	Asn	Asn	Ser	Asp	Gly	Val
			885						890					895
Asp	Tyr	Ala	Tyr	Ala	Gly	Asp	Leu	Gln	Gly	Asn	Leu	Trp	Arg	Phe
			900					905					910	
Leu	Ile	Ala	Gly	Lys	Val	Asn	Gln	Asp	Asp	Pro	Phe	Ser	Arg	Ala
	915						920						925	
Asp	Gly	Pro	Thr	Val	Ala	Ser	Ser	Phe	Arg	Val	Ser	Phe	Gly	Gly
	930					935					940			
Pro	Leu	Tyr	Ser	Ala	Val	Asp	Ser	Ala	Gly	Ala	Ala	Gln	Ala	Ile
945					950					955				960
Ala	Ala	Pro	Ser	Leu	Val	Arg	His	Pro	Thr	Arg	Lys	Gly	Tyr	Ile
			965						970					975
Ile	Phe	Gly	Thr	Gly	Lys	Tyr	Phe	Glu	Asn	Ala	Asp	Ala	Arg	Ala
			980					985					990	
Thr	Ser	Arg	Ala	Gln	Thr	Leu	Tyr	Gly	Ile	Trp	Asp	Gln	Gln	Thr
		995					1000					1005		
Gly	Glu	Ala	Ala	Gly	Ser	Thr	Pro	Arg	Leu	Thr	Arg	Gly	Asn	Leu
	1010					1015					1020			
Gln	Gln	Thr	Leu	Asp	Leu	Gln	Ala	Asp	Ser	Thr	Phe	Ala	Ser	Thr
1025					1030					1035				104
Arg	Thr	Ile	Arg	Ile	Gly	Ser	Gln	Asn	Pro	Val	Asn	Trp	Leu	Asn
			1045						1050					1055
Asp	Gly	Ser	Thr	Lys	Gln	Ser	Gly	Trp	Tyr	Leu	Asp	Phe	Met	Val
		1060						1065				1070		
Gly	Thr	Leu	Lys	Gly	Glu	Met	Leu	Ile	Glu	Asp	Met	Ile	Ala	Ile
	1075					1080						1085		
Gln	Val	Val	Leu	Leu	Gln	Thr	Ile	Thr	Pro	Asn	Asp	Asp	Pro	Cys
	1090					1095					1100			
Asp	Gly	Ala	Ser	Asn	Trp	Thr	Tyr	Gly	Leu	Asp	Pro	Tyr	Thr	Gly
1105					1110					1115				112
Arg	Thr	Arg	Phe	Thr	Val	Phe	Asp	Leu	Gly	Arg	Gln	Gly	Val	Val
			1125						1130					1135
Leu	Glu	Ile	Arg	Leu	Thr	Gly	Thr	Thr	Arg	Arg	Asn	Val	Gly	Asn
			1140					1145					1150	
Val	Pro	Ser	Arg	Lys	Ala	Trp	Glu	Ala						
		1155					1160							

<210> 48
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 Lys Pro Gly Ser Val Val Ser Tyr Ser Gly Thr Val Ser Gln Pro Trp
 65 70 75 80
 Ser Thr Ile Thr Asp Ile Tyr Ile His Lys Gln Met Ser Glu Gln Glu
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 Gly Tyr Thr Lys Asp Val Ala Lys Leu Gly Met Ser Ser Ala Asn Ser
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 Pro Asn Asn Leu Tyr Asn Leu Thr Ile Ala Thr Pro Thr Ser Thr Thr
 85 90 95
 Tyr Thr Leu Thr Ala Thr Pro Ile Asn Ser Gln Thr Arg Asp Lys Thr
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 Cys Gly Lys Leu Thr Leu Asn Gln Leu Gly Glu Arg Gly Ala Ala Gly
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 Lys Thr Gly Asn Asn Ser Thr Val Asn Asp Cys Trp Arg
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